



## Operating Instructions

# ***UPA-P Series***

*UPA-1P and UPA-2P*  
*Self-Powered Loudspeakers*

(Serial Numbers 981000 and above)



*UPA-1P*

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*Part #: 05.054.017.01 Rev B*

**Keep these important operating instructions.**

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## Symbols Used

These symbols indicate important safety or operating features in this booklet and on the chassis.



Dangerous voltages: risk of electric shock	Important operating instructions	Frame or chassis	Protective earth ground
Pour indiquer les risques résultant de tensions dangereuses	Pour indiquer important instructions	Masse, châssis	Terre de protection
Zu die gefahren von gefährliche spanning zeigen	Zu wichtige betriebs- anweisung und unter- haltsanweisung zeigen	Rahmen oder chassis	Die schutzerde
Para indicar azares provengo de peligroso voltajes	Para indicar importante funcionar y mantenimiento instrucciones	Armadura o chassis	Tierra proteccionista

Declaration of Conformity According to ISO/IEC Guide and EN 45014

The Manufacturer:

**Name:** Meyer Sound Laboratories, Inc.  
**Address:** 2832 San Pablo Avenue  
Berkeley, California 94702-2204, USA

Conforms to the following Product Specifications:

Safety: EN60065: 1994  
EMC: EN55103-1 emission  
EN55103-2 immunity  
The product herewith complies with the requirements  
of the Low Voltage Directive 73 / 23 / EEC and  
the EMC Directive 89 / 336 / EEC.

**Office of Quality Manager**  
**Berkeley, California USA**  
**October 1, 1994**

The following Meyer Sound patents apply to the UPA-P:

**Des. 271,967** (U.S.A.)  
**4,152,552** (U.S.A.)  
**2,379,220** (France)  
**1,591,480** (U.K.)  
**Other patents pending**

Declares that the product:

**Product Name:** UPA-1P, UPA-2P  
**Product Options:** All

Environmental Specifications for  
Meyer Sound Electronics Products:

Operating temperature: 0° to + 45°  
Nonoperating temperature: < -40° C or > +75° C  
Humidity: to 95% at 35  
Operating Altitude: to 4600 m (15,000 ft)  
Nonoperating Altitude: to 6300 m (25,000 ft)  
Shock: 30g 11 msec half-sine  
on each of 6 sides  
Vibration: 10 Hz to 55 Hz (0.010m  
peak-to-peak excursion)

Made by Meyer Sound Laboratories  
Berkeley, California USA  
European Office:  
Meyer Sound Lab. GmbH  
Carl Zeiss Strasse 13  
56751 Polch, Germany



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# Introduction

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## The Integrated Design

The Meyer UPA-P Series (UPA-1P, UPA-2P) self-powered loudspeakers are comprised of:

- one 12-inch cone driver and one 3-inch diaphragm compression driver;
- phase-corrected, optimized control electronics;
- a two-channel amplifier (350 W<sub>rms</sub>/ch).

The drivers, control electronics, and amplifier are integrated into a compact, trapezoidal enclosure. The UPA-P Series is ideally suited for compact, high-powered PA applications, such as main PA, churches, surround systems, and theatres. In addition the UPA-P is an excellent solution for use under-balcony, or down-fill, or front fill and even as a musical instrument speaker.

The UPA-P Series, more than a powered version of the Meyer UPA-C Series (UPA-1C, UPA-2C), implements these significant design improvements:

- The gain structure between the control electronics and amplifier is perfectly matched.
- The amplifier is optimized for the system, providing substantial power without endangering the drivers.
- The integrated design simplifies setup and installation, eliminates amp racks, and extends the durability and reliability of the loudspeaker.

The UPA-P produces flat acoustical phase and amplitude response, full-range bandwidth, precise imaging, and exceptional system impulse response. The UPA-P supplies a maximum SPL of 132.5 dB at 1 m with excellent intelligibility, without the distortion or coloration commonly exhibited by small PA speakers.

## The UPA-P Horns: Constant-Q

As a part of its research and development efforts, Meyer Sound has solved the most difficult problems associated with horn design. In order to appreciate the significance of this work, it is necessary to define an often misunderstood term: the **beamwidth** of a horn is the angle at which the sound pressure at a given frequency decreases to half (–6 dB) its on-axis amplitude. Specifying beamwidth using the –6 dB points has been proposed as the audio industry standard and Meyer Sound adheres to this definition.

*NOTE: In the past, beamwidth was often used to describe the angle at which the sound pressure decreased 10 dB from its on-axis amplitude because many listeners perceive –10 dB as a halving in pressure. Meyer Sound defines beamwidth as the angle at which sound pressure decreases 6 dB. –6 dB represents the actual halving of sound pressure. When reading a beamwidth specification, it is essential to determine whether it refers to the –6 or –10 dB points. As the two standards produce very different results: the –10 dB points yield a wider angle.*

Previous technologies produced horns whose beamwidth varied over the operating frequency range. These horns also displayed nonuniform frequency response within, and significant side lobe energy outside their beamwidth. Both undesirable characteristics, particularly prevalent for horns with a wide beamwidth, make array design extremely problematic.

The UPA-P was developed in Meyer Sound's anechoic chamber by measuring coverage patterns using angular and frequency resolutions of 1° and 1/36 octave, respectively. The UPA-P horns exhibit *constant-Q*: the beamwidth remains consistent across the horn's operating frequency range in both the vertical and horizontal planes. The UPA-2P horn's narrow beamwidth (45°H x 45°V) permits precise coverage with minimal interaction between neighboring array elements. The UPA-1P horn's wide horizontal beamwidth (100°H x 40°V) addresses a larger coverage area with fewer speakers.

Both speakers share the following remarkable attributes:

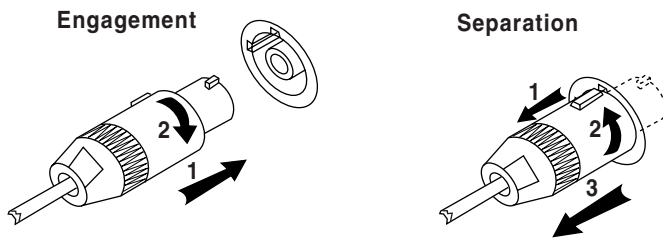
- uniform frequency response within the beamwidth
- rapid and uniform amplitude attenuation for all frequencies outside the beam width
- minimal side lobes

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## AC Power

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The UPA-P uses a PowerCon locking 3-pole AC mains connector that prevents inadvertent disconnection. The unit must have the correct power plug for the AC power in the area in which it will be used.



When AC power is applied to the UPA-P, the **Intelligent AC™** supply automatically selects the correct operating voltage, allowing the UPA-P to be used internationally without manually setting voltage switches. The Intelligent AC supply performs the following protective functions to compensate for hostile conditions on the AC mains:

- suppresses high voltage transients up to several kilovolts
- filters EMI (radio frequencies and noise present on the AC line)
- sustains operation during low-voltage periods, which minimizes audio discontinuity
- provides soft-start power-up, which eliminates high inrush current

The UPA-P can withstand continuous voltages up to 264V and allows any combination of voltage to GND (i.e. Neutral-Hot-GND, Hot-Hot-GND). Continuous voltages higher than 264V may damage the unit.

### Voltage Requirements

The UPA-P operates safely and without audio discontinuity if the AC voltage stays within the range 88–264V, 47–63 Hz. After applying AC power, the system is muted while the circuitry charges up and stabilizes. After two seconds, the **On/Temp.** LED on the user panel illuminates green, the system unmutes and is ready to pass audio signals. If the On/Temp. LED does not illuminate or the system does not respond to audio input after ten seconds, consult the Troubleshooting section.

The UPA-P's power supply uses stored energy to continue functioning for about 10 AC cycles if the voltage decreases below 88V (a condition known as *brownout*). The precise

length of time the unit will continue to function during brownout depends on the operating level and how low the voltage drops. The unit turns off if the voltage does not increase above 88V for 1 to 5 seconds. If the UPA-P shuts down due to brownout, the power supply automatically turns on if the voltage returns to the normal operating range. If the UPA-P does not turn back on after ten seconds, consult the Troubleshooting section.

*NOTE: We recommend that the supply be operated at least a few volts away from the upper and lower bounds of the operating range to avoid possible shutdown.*

### Current Requirements

Each UPA-P requires approximately 3 Arms @115V (1.5 Arms@230V) for proper operation, allowing up to five UPA-Ps to be powered from one 15 A circuit. However, we recommend powering no more than three UPA-Ps per 15 A branch to allow a 30% margin for peak voltages. The UPA-P presents a dynamic load to the AC mains which causes the amount of current to fluctuate between quiet and loud operating levels. This affects the number of UPA-Ps that can be used for a given breaker type. Since different types of cables and circuit breakers heat up and trip at varying rates, it is essential to understand the types of current ratings and how they correspond to circuit breaker and cable specifications.

The **maximum continuous RMS** current is the maximum RMS current over a duration of at least 10 seconds. It is used to calculate the temperature increase in cables, which is used to select cables that conform to electrical code standards. It is also used to select the rating for slow-reacting thermal breakers.

The **maximum burst RMS** current is the maximum RMS current over a one second duration. It is used to select the rating for most magnetic breakers.

The **maximum instantaneous peak current during burst** is used to select the rating for fast-reacting magnetic breakers and to calculate the peak voltage drop in long AC cables according to the formula

$$V_{pk\_drop} = I_{pk} \times R_{total\ cable}$$

Use the table below as a guide to select cables and circuit breakers with appropriate ratings for your operating voltage.

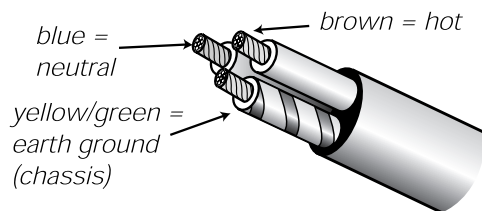
UPA-P Current Ratings

	115V	230V	100V
Idle RMS	0.25 A <sub>RMS</sub>	0.13 A <sub>RMS</sub>	0.3 A <sub>RMS</sub>
Max. Continuous RMS	2.8 A <sub>RMS</sub>	1.4 A <sub>RMS</sub>	3.2 A <sub>RMS</sub>
Max. Burst RMS	3.2 A <sub>RMS</sub>	1.6 A <sub>RMS</sub>	3.7 A <sub>RMS</sub>
Max. Peak During Burst	5.0 A <sub>RMS</sub>	2.5 A <sub>RMS</sub>	5.8 A <sub>RMS</sub>

To determine the minimum total service power required by a system of UPA-P, or other Meyer self-powered speakers, add their **maximum continuous RMS** currents together. We recommend allowing an additional 30% above the minimum amperage to prevent peak voltage drops at the service entry and nuisance tripping.

## Power Connector Wiring

Use the following AC cable wiring diagram to create international or special-purpose power connectors:



AC cable color code

If the colors referred to in the diagram don't correspond to the terminals in your plug, use the following guidelines:

- Connect the blue wire to the terminal marked with an *N* or colored black.
- Connect the brown wire to the terminal marked with an *L* or colored red.
- Connect the green and yellow wire to the terminal marked with an *E* (or ⊕) or colored green (or green and yellow).

## Safety Issues



Do not use a ground-lifting adapter or cut the AC cable ground pin.



Keep all liquids away from the UPA-P to avoid hazards from electrical shock.

Do not operate the unit with worn or frayed cables; replace them immediately.

If the UPA-P will be installed outdoors contact Meyer Sound for information about the rain hood and weather protection for the drivers and electronics

## The Modular Rear Panel

The rear panel of the UPA-P has two slots for processor modules. The top slot contains the **Audio Input and Control Module**; the bottom slot contains the optional **Remote Monitoring System™ (RMS) Module**. A blank plate covers the bottom slot if RMS is not installed. For drawings of the modules refer to page 13.

### Audio Input

There are three, interchangeable Audio Input and Control Modules with optimized connectors and controls for different applications. Each module has a 24V Fan connector to power an optional fan (see page 7).

Each module uses a three-pin, female XLR audio input connector with a 10 kΩ balanced input impedance wired with the following convention:

- Pin 1** — 220 kΩ to chassis and earth ground (ESD clamped)
  - Pin 2** — Signal
  - Pin 3** — Signal
  - Case** — Earth (AC) ground and chassis
- Differential Inputs

Pins 2 and 3 carry the input as a differential signal. Use standard audio cables with XLR connectors for balanced signal sources. A single audio source can drive multiple UPA-Ps with a paralleled input loop, creating an unbuffered hardwired loop connection, with negligible loss in signal level. For example, since the input impedance of one UPA-P is 10 kΩ, looping 20 UPA-Ps produces a balanced input impedance of 500Ω. With a 150Ω audio source, the 500Ω load results in only a 2.28 dB loss.

## Looping Audio Input Module

This standard module uses a balanced, female XLR connector for audio input and a male XLR loop connector to interconnect multiple speakers. The audio input connector is hardwired with pin 2 hot to comply with audio industry standards. The loop connector, wired in parallel to the audio input, transmits the input signal if the UPA-P is turned off for any reason.

## Summing Audio Input Module

This module has two balanced female XLR connectors. The second female XLR connector functions as a summing input. Applying a signal to one of the inputs results in a normal signal level. Utilizing both summing inputs creates a correctly summed mono signal with each input 6 dB below the level of a single input. This is an effective method for distributing both sides of a stereo signal to a single UPA-P without requiring external level control.

## Looping, Polarity, and Attenuating Audio Input Module

This module has a balanced, female XLR audio input connector, a male XLR loop connector, an input polarity switch, and a level attenuator knob. The input polarity switch offers a convenient method of reversing the phase of the speaker. When the input polarity switch is in the up (+) position, pin 2 is hot relative to pin 3, resulting in a positive pressure wave when a positive signal is applied to pin 2. When the switch is down (-), pin 3 is hot relative to pin 2, resulting in a positive pressure wave when a positive signal is applied to pin 3. The level attenuator knob operates between 0 dB (no level attenuation) in a fully clockwise position to -12 dB in a fully counterclockwise position.

## Remote Monitoring System™

The UPA-P can be equipped to operate with the **Remote Monitoring System (RMS)** network and software application. RMS displays signal and power levels, driver and cooling fan status, limiter activity, the state of the polarity switch, attenuator level, and amplifier temperature for all speakers in the network on a Windows-based PC. RMS can also be configured to enable speaker muting. RMS is an excellent field-diagnostic tool that removes the guesswork from troubleshooting during a performance. All Meyer loudspeakers with RMS can be integrated on the same network. Installing an RMS module requires only a Phillips screwdriver. Contact Meyer Sound for more information about RMS.

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# Amplification, Limiting, and Cooling System

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## Amplification and Limiting

Each driver in the UPA-P is powered by one channel of a proprietary Meyer Sound amplifier utilizing complementary power MOSFET output stages (class AB, bridged, 350 Wrms/ch). Each channel has a limiter that prevents driver over-excursion and regulates the temperature of the voice coil. The limiters protect the drivers without the glaring compression effects imposed by typical limiters, allowing high SPLs across each driver's entire frequency range. Limiter activity for the high and low channels is indicated by two yellow Limit LEDs on the rear panel (the High Limit LED is above the Low Limit LED).

The UPA-P performs within its acoustical specifications and operates at a normal temperature if the Limit LEDs are on for no longer than two seconds, and off for at least one second. If either LED remains on for longer than three seconds, that channel incurs these consequences:

- Increasing the input level will not increase the volume.
- The system distorts due to clipping and nonlinear driver operation.
- Unequal limiting between the low and high frequency drivers alters the frequency response.

While the UPA-P limiters fully protect the system under overload conditions and exhibit smooth sonic characteristics; we recommend that you do not intentionally drive the UPA-P into continuous limiting to attain compression effects.

For applications where large amounts of compression are required, we recommend using an outboard compressor/limiter for greater control of limit and compressor effects.

## Amplifier Natural Convection Cooling System

**The UPA-P's amplifier employs a natural convection cooling system that is cooled by the air flowing over the heatsink. Allow for proper ventilation of fresh air when using the speaker in tightly packed conditions.**

If the temperature of the heatsink reaches 85°C (185°F), the On/Temp. LED on the rear panel turns from green (On) to red (Temp.) and the limiter threshold is lowered to

a *safe* level to prevent the system from overheating. Under high temperature conditions the output level is reduced 6 dB. When the heatsink temperature decreases to 75°C (167°F), the On/Temp. LED changes from red to green and the limiter threshold returns to normal.



*The heatsink reaches temperatures up to 185°F (85°C) during normal operation. Use extreme caution when approaching the rear of the cabinet.*

## Fan Assembly Kit

While convection cooling is adequate for most applications, in situations where the UPA-P is driven into continuous limiting under severe temperature conditions, or where ventilation is restricted, we recommend the installation of an optional fan kit to maintain a safe operating temperature.

The easy-to-install fan, powered through the **24V Fan** connector on the rear panel, blows air directly onto the heatsink. The fan speed increases as the heatsink temperature rises, which maintains a safe operating temperature with minimal fan noise. Contact Meyer Sound to order the fan kit.

## Power Supply Fan

The power supply is cooled by a single small internal fan that turns on low when the unit is first powered up. The fan doubles its speed as the system is driven with audio. Since the fan draws air in from, and exhausts it at the back of the cabinet, there must be at least six inches clearance behind the cabinet, and adequate air flow.

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## Rigging

The UPA-P weighs 77.5 lb (35.2 kg). The maximum recommended load for an UPA-P with aircraft pan fittings is 420 lb (191 kg). This *working load* is based on a 5:1 safety factor. The UPA-P has four rigging brackets (two on top, two on bottom of the cabinet); each bracket is capable of supporting the full working load of the cabinet.

There are four types of interchangeable rigging brackets, each fastened by six Phillips screws:

- aircraft pan fittings (ring and stud)
- $\frac{3}{8}$ "-16 nut plates
- M-10 x 1.5 metric nut plates
- blank plates (if no rigging brackets are requested)

*NOTE: Units with nut plates are rated for the weight of one cabinet only.*

Rigging load ratings assume a straight tensile pull and that the cabinet is in new condition with aircraft pan fittings. If these conditions are not met, the load ratings can be reduced significantly. Load ratings can also be reduced by age, wear, and damage. It is important to inspect the rigging hardware regularly and replace worn or damaged components immediately.

*NOTE: All Meyer Sound products must be used in accordance with local, state, federal, and industry regulations. It is the owner's and/or user's responsibility to evaluate the reliability of any rigging method for their application. Rigging should be done only by experienced professionals.*

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## Full-Range Systems

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### Introductory Concepts

The UPA-P is not a full range speaker. It is optimized to be used with the Meyer **USW-1P** and **UMS-1P** self-powered subwoofers. It can also be used with the Meyer **650-P** and **PSW-2** self-powered subwoofers. For information on integrating the UPA-P with speakers other than the USW-1P contact Meyer Sound Technical Support.

Using the UPA-P in a full-range system is straightforward but the following concepts are important to consider before installing a system.

### Polarity

With the UPA-P in close-proximity to, and coplanar with, the USW-1P, 650-P, or PSW-2, both speakers should be set to the same polarity. Separating the UPA-P from the subwoofer by more than 5 feet may require polarity reversal or a delay line to compensate for the propagation delay between the speakers and the measurement position.

### Array Design

Creating an effective array with the UPA-P requires a precise understanding of how to combine the coverage area and SPL of the individual speaker with those of adjacent speakers. Array design is a trade-off between increasing on-axis power and creating smooth transitions between the coverage areas of adjacent speakers.

As the splay angle (the angle between adjacent cabinet faces) decreases below the coverage angle of the indi-



vidual speaker, the power at the center of the array increases, but the coverage overlap between adjacent speakers causes comb filtering and other frequency response variations.

As the splay angle increases toward the coverage angle, the power at the center of the array decreases, but the variations in frequency response diminish. As the splay angle increases beyond the coverage angle, noticeable gaps begin to form in the array's coverage area.

## Measurement and Correction Tools

It is recommended that even the most carefully assembled sound systems be analyzed with precise measurement tools. We recommend using the Meyer **SIM® System II Sound Analyzer** and **CP-10 Parametric Equalizer** to

- choose, place, and array speakers;
- measure propagation delays between speakers to set the correct polarity and delay times;
- measure and equalize variations in frequency response caused by the acoustical environment and the placement and interaction of speakers.

## UPA-P with the USW-1P

UPA-P Frequency Range: 60 Hz – 18 kHz

USW-1P Frequency Range: 32 Hz – 150 Hz

Two UPA-Ps placed on top of, and coplanar to, one half-space loaded USW-1P were designed to produce a flat system frequency response (32 Hz – 18 kHz) when the same full-range signal is sent to all speakers. It is important to emphasize that the UPA-P and USW-1P are in phase in the region in which their responses overlap (60 – 120 Hz).

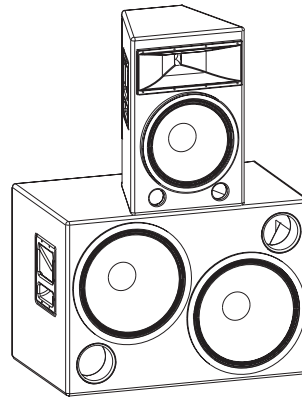
All Meyer self-powered subwoofers have internal cross-overs which enable them to receive full-range signals.

UPA-Ps and USW-1Ps can be configured in a wide variety of array configurations to suit specific application needs. The following section shows four recommended configurations.

For additional system design ideas, contact Meyer Sound for the following *TechNotes* on UPA-P array design:

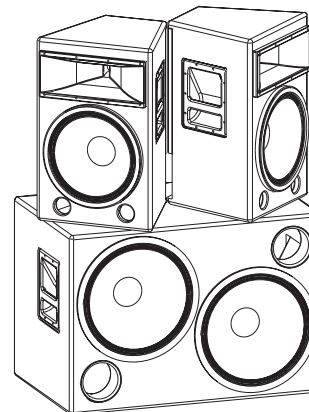
- Two UPA-1Ps @ 70° Horizontal Splay (Doc #: 01.990.101.90 A)
- Two UPA-1Ps @ 85° Horizontal Splay (Doc #: 01.990.101.91 A)
- Two UPA-2Ps Tightpack (Doc #: 01.990.101.92 A).
- Three UPA-2Ps Tightpack (Doc #: 01.990.101.93 A).

These documents are also available on the Meyer Sound website: <http://www.meyersound.com>.



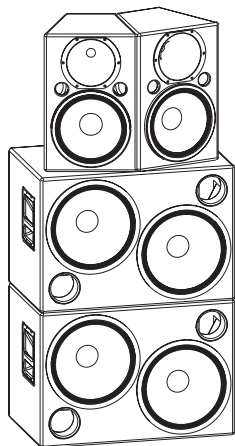
A single UPA-1P paired with a USW-1P provides < 134 dB SPL across 100° of horizontal coverage.

For a system that requires a wider horizontal coverage area, we recommend using two UPA-1Ps splayed at 85° with a single USW-1P. The array pictured below provides < 136 dB SPL across 180° of horizontal coverage.





For a high power, compact system, we recommend using two UPA-2Ps and two USW-1Ps. This array provides < 143 dB SPL across 60° of horizontal coverage



## Loading

As a general rule, if subwoofers are located in half-space (single boundary, like a floor), then they have 6 dB more gain than in free-field conditions.

This increase in low frequency energy is ideal for many musical styles and venues but in some circumstances, where a flatter response is desired we offer the following solutions:

### The VX-1:

The VX-1 is an ideal control option for a UPA-P and USW-1P system. The VX-1 is a stereo virtual crossover which allows the user to adjust the gain, switch between stereo and mono distribution of two inputs and make shelving EQ adjustments to the left and right sides of the system.

### Separate Feeds:

One simple method of attenuating the USW-1P is to feed separate signals to the USW-1P(s) and to the UPA-P(s). With independent control of the main outputs and sub levels, their relative proportions can be adjusted.

### The Looping, Polarity, and Attenuating Audio Input Module:

This optional module, described on page 6 of this user guide allows for level control on the user panel of the UPA.

## Verifying Driver Polarity

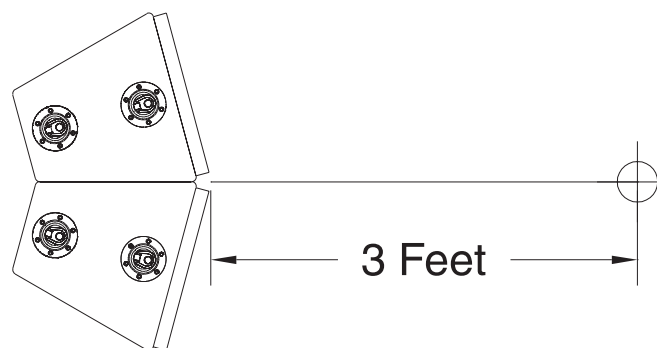
Incorrect driver polarity impairs system performance and may damage the drivers. All Meyer loudspeakers are shipped with the drivers in correct alignment.

If the driver or circuit wiring has been removed or disassembled it is essential to check the polarity between drivers and between adjacent loudspeakers.

### Polarity In Adjacent Loudspeakers

Use the following test procedure to verify the polarity between two adjacent loudspeakers *of the same type*:

1. Position two loudspeakers adjacent to each other.
2. Place a measurement microphone 3 ft from the speakers on the axis to the center of the array.



3. Connect a signal source to one speaker and note the frequency response and overall level.
4. Apply the same signal to the second speaker with the first speaker still connected.

The polarity is correct if the frequency response remains constant with a 5-6 dB SPL increase in amplitude. Broad-band cancellation (decreased overall level) indicates polarity reversal.



Since polarity reversal causes excessive driver excursion at high source levels, use moderate levels when conducting these tests.

## ***Polarity within a UPA-P***

Use the following test procedure to verify polarity between drivers in the same loudspeaker:

1. Place a measurement microphone 1 meter from the front of the loudspeaker at the midway point between the low and high frequency drivers.
2. Connect a full range signal to the loudspeaker and note the frequency response.

The polarity is correct if the frequency response is smooth through the crossover region (800 Hz to 1.5 kHz). Cancellation of 6dB or more in this region indicates polarity reversal.

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## ***Troubleshooting***

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This section suggests several possible solutions to some common problems encountered by UPA-P users and is not intended to be a thorough troubleshooting guide. Qualified electronics technicians with access to a test bench can request the following documents from Meyer Sound: Troubleshooting Guide, The Low Frequency Driver Replacement Procedure, and The High Frequency Driver Replacement Procedure for the UPA-1P/2P.

### **The On/Temp. LED does not illuminate, there is no audio, and the power supply fan is off.**

1. Make sure the AC power cable is the correct type for the regional voltage and that it is securely connected to the AC inlet then unplug and reconnect the AC cable.
2. Use an AC voltmeter to verify that the AC voltage is within the ranges 88–264V, 47–63 Hz.
3. Call Meyer Sound Technical Support.

### **The On/Temp. LED is illuminated but there is no sound.**

1. Verify that the audio source (mixer, EQ, delay) is sending a valid signal.
2. Make sure the XLR cable is securely fastened to the XLR audio input connector.
3. Verify that the XLR cable is functioning by substituting another cable or by using the cable in question in a working system.
4. Send the audio signal to another speaker to insure signal presence and that the level is within the proper range. Turn the source level down before reconnecting the audio input and increase the level slowly to avoid a sudden blast of sound.
5. If possible, monitor the audio source with headphones.

### **Hum or noise is produced by the speaker.**

1. Disconnect the audio input. If the noise persists, the problem is within the UPA-P. In this case return the unit to the factory or nearest authorized service center. If the hum ceases, the noise originates somewhere earlier in the signal path.
2. Make sure the XLR cable is securely fastened to the XLR audio input connector.
3. Send the audio signal to another speaker to insure signal presence and that the level is within the proper range. Turn the source level down before reconnecting the audio input and increase the level slowly to avoid a sudden blast of sound.
5. Hum or noise can be produced by a ground loop. Since the UPA-P is effectively *ground-lifted*, the loop must be broken elsewhere in the system.

### **The audio produced by the speaker is distorted or compressed but the limit light is not illuminated.**

1. Make sure the XLR cable is securely fastened to the XLR audio input connector.
2. Send the audio signal to another speaker to insure that the level is within the proper range. Turn the source level down before reconnecting the audio input and increase the level slowly to avoid a sudden blast of sound.
3. Monitor the audio source with headphones.

**The audio produced by the speaker is highly compressed and the limit light is constantly yellow.**

1. Turn down the level of the input signal to the speaker system.

**Only the high or low driver seems to produce sound.**

1. Make sure the audio signal is full-range and has not been filtered in a previous stage of the signal chain. If possible, monitor the audio source with high-quality headphones.
2. Send the audio signal to another speaker to insure that the signal is full-range. Turn the source level down before reconnecting the audio input and increase the level slowly to avoid a sudden blast of sound.
3. Use a sine wave and/or pink noise generator to send a variety of frequencies to the speaker.

**There is sound but it does not seem to be at full power and the On/Temp. LED is red.**

This occurs in conditions where the heatsink temperature reaches 85°C (185°F), indicating that the amplifier is thermally overloaded. The limiter threshold has dropped to a safe level, so the audio level is reduced.

1. Make sure there is enough clearance above, below, and behind the unit.
2. Make sure there is sufficient air flow around the unit.
3. Avoid exposing the heatsink to direct sunlight if the ambient temperature is high.
4. If the ambient temperature is greater than 30°C and this condition occurs frequently, contact Meyer Sound to order the optional Fan Kit.

See the section Amplification, Limiting, and Cooling System on page 6 for a complete discussion about the cooling system.

**There is no sound, the On/Temp. LED is dim or off, and the power supply fan is on high speed.**

This extremely rare event occurs when the power supply overheats, causing a 1-2 minute interruption in operation. The unit turns on again when the power supply has cooled sufficiently.

1. Make sure there is at least six inches clearance behind the unit.
2. Make sure there is sufficient air flow around the unit.

See the section Amplification, Limiting, and Cooling System on page 6 for a more information about the power supply's internal fan and cooling system.



## Safety Summary



### English

- To reduce the risk of electric shock, disconnect the loudspeaker from the AC mains before installing audio cable. Reconnect the power cord only after making all signal connections.
- Connect the loudspeaker to a two-pole, three wire grounding mains receptacle. The receptacle must be connected to a fuse or circuit breaker. Connection to any other type of receptacle poses a shock hazard and may violate local electrical codes.
- Do not install the loudspeaker in wet or humid locations without using weather protection equipment from Meyer Sound.
- Do not allow water or any foreign object to get inside the loudspeaker. Do not put objects containing liquid on, or near, the unit.
- To reduce the risk of overheating the loudspeaker, avoid exposing it to direct sunlight. Do not install the unit near heat emitting appliances, such as a room heater or stove.
- This loudspeaker contains potentially hazardous voltages. Do not attempt to disassemble the unit. The unit contains no user serviceable parts. Repairs should be performed only by factory trained service personnel.

### Français

- Pour réduire le risque d'électrocution, débrancher la prise principale de l'haut-parleur, avant d'installer le câble d'interface allant à l'audio. Ne rebrancher le bloc d'alimentation qu'après avoir effectué toutes les connexions.
- Branchez l'haut-parleur dans une prise de courant à 3 dérivations (deux pôles et la terre). Cette prise doit être munie d'une protection adéquate (fusible ou coupe-circuit). Le branchement dans tout autre genre de prise pourrait entraîner un risque d'électrocution et peut constituer une infraction à la réglementation locale concernant les installations électriques.
- Ne pas installer l'haut-parleur dans un endroit où il y a de l'eau ou une humidité excessive.
- Ne pas laisser de l'eau ou tout objet pénétrer dans l'haut-parleur. Ne pas placer de récipients contenant un liquide sur cet appareil, ni à proximité de celui-ci.
- Pour éviter une surchauffe de l'haut-parleur, conserver-la à l'abri du soleil. Ne pas installer à proximité d'appareils dégageant de la chaleur tels que radiateurs ou appareils de chauffage.
- Ce haut-parleur contient des circuits haute tension présentant un danger. Ne jamais essayer de le démonter. Il n'y a aucun composant qui puisse être réparé par l'utilisateur. Toutes les réparations doivent être effectuées par du personnel qualifié et agréé par le constructeur.

### Deutsch

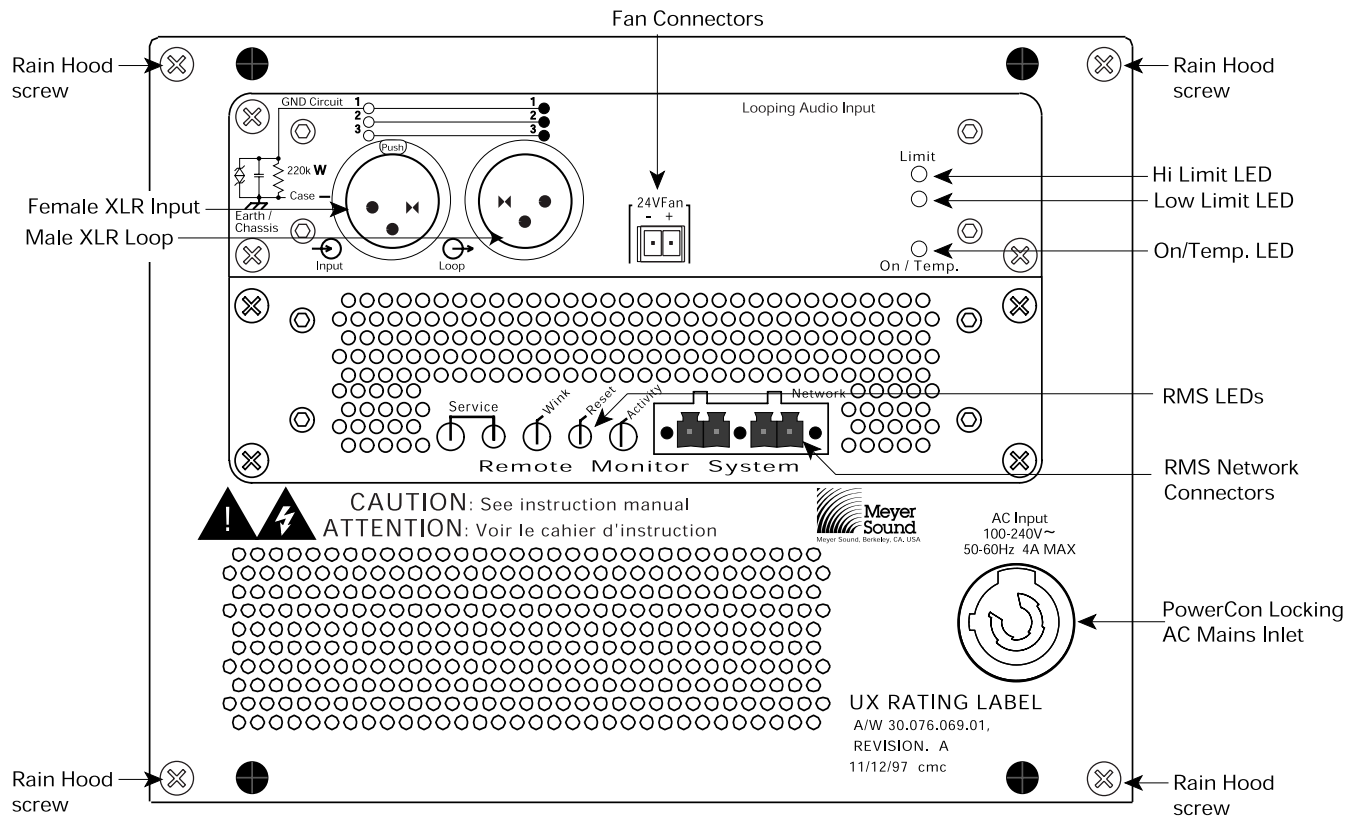
- Um die Gefahr eines elektrischen Schlages auf ein Minimum zu reduzieren, den Lautsprecher vom Stromnetz trennen, bevor ggf. ein Audio-Schnittstellensignalkabel angeschlossen wird. Das Netzkabel erst nach Herstellung aller Signalverbindungen wieder einstecken.
- Der Lautsprecher an eine geerdete zweipolige Dreiphasen-Netzsteckdose anschließen. Die Steckdose muß mit einem geeigneten Abzweigschutz (Sicherung oder Leistungsschalter) verbunden sein. Der Anschluß der unterbrechungsfreien Stromversorgung an einen anderen Steckdosentyp kann zu Stromschlägen führen und gegen die örtlichen Vorschriften verstoßen.
- Der Lautsprecher nicht an einem Ort aufstellen, an dem sie mit Wasser oder übermäßig hoher Luftfeuchtigkeit in Berührung kommen könnte.
- Darauf achten, daß weder Wasser noch Fremdkörper in das Innere den Lautsprecher eindringen. Keine Objekte, die Flüssigkeit enthalten, auf oder neben die unterbrechungsfreie Stromversorgung stellen.
- Um ein Überhitzen dem Lautsprecher zu verhindern, das Gerät vor direkter Sonneneinstrahlung fernhalten und nicht in der Nähe von wärmeabstrahlenden Haushaltsgeräten (z.B. Heizgerät oder Herd) aufstellen.
- Im Inneren dieses Lautsprecher herrschen potentiell gefährliche Spannungen. Nicht versuchen, das Gerät zu öffnen. Es enthält keine vom Benutzer reparierbaren Teile. Reparaturen dürfen nur von ausgebildetem Kundendienstpersonal durchgeführt werden.

### Español

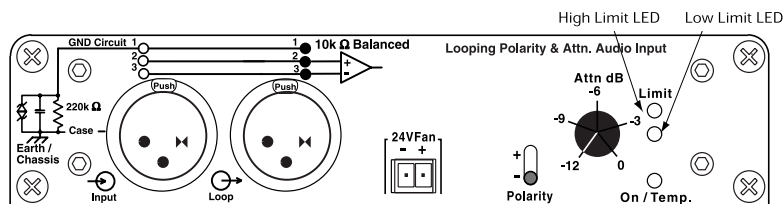
- Para reducir el riesgo de descarga eléctrica, desconecte de la red el altoparlante antes de instalar el cable de señalización de interfaz de la señal. Vuelva a conectar el conductor flexible de alimentación solamente una vez efectuadas todas las interconexiones de señalización.
- Conecte el altoparlante a un tomacorriente bipolar y trifilar con neutro de puesta a tierra. El tomacorriente debe estar conectado a la protección de derivación apropiada (ya sea un fusible o un disyuntor). La conexión a cualquier otro tipo de tomacorriente puede constituir peligro de descarga eléctrica y violar los códigos eléctricos locales.
- No instale el altoparlante en lugares donde haya agua o humedad excesiva.
- No deje que en el altoparlante entre agua ni ningún objeto extraño. No ponga objetos con líquidos encima de la unidad ni cerca de ella.
- Para reducir el riesgo de sobrecalentamiento, no exponga la unidad a los rayos directos del sol ni la instale cerca de artefactos que emiten calor, como estufas o cocinas.
- Este altoparlante contiene niveles de voltaje peligrosos en potencia. No intente desarmar la unidad, pues no contiene piezas que puedan ser reparadas por el usuario. Las reparaciones deben efectuarse únicamente por parte del personal de mantenimiento capacitado en la fábrica.

## Rear Panel and Optional Modules

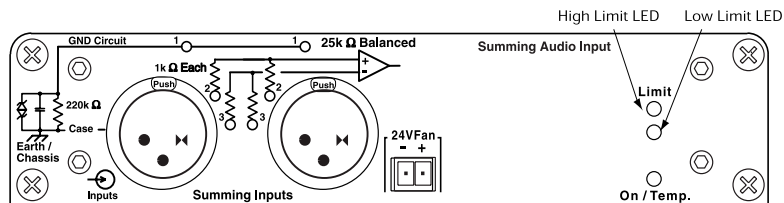
The user panel and optional modules are described on page 5 of this guide.



User Panel with RMS option and Standard Looping Audio Input Module.

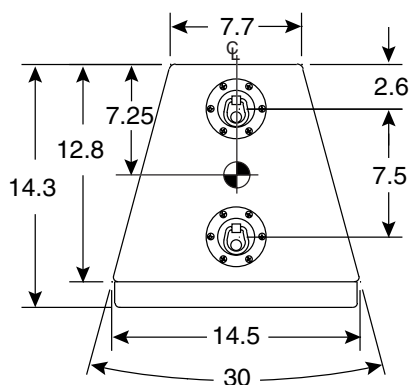


Looping, Polarity, and Attenuating Input Module

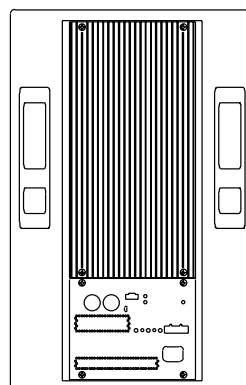


Summing Audio Input Module

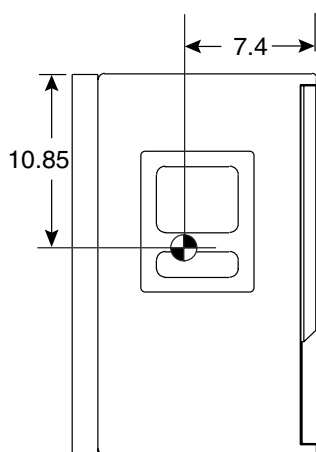
# **Dimensions** (in inches)



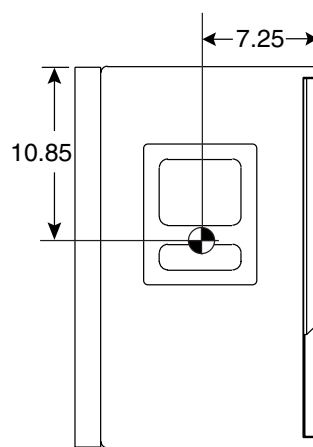
UPA-P Top



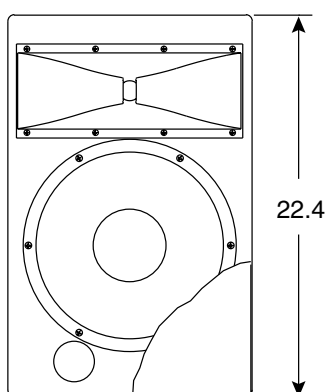
UPA-P Back



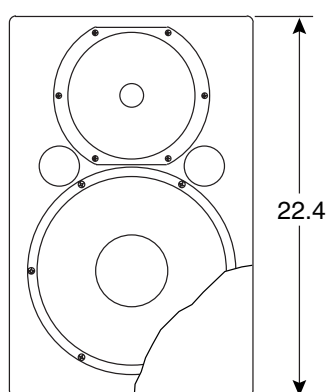
UPA-1P Side



UPA-2P Side



UPA-1P Front



UPA-2P Front

Center of gravity  
represented by ●

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## ***Notes***

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### ***Contact Information***

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